



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/539,796

10/27/2005

Hendrik Derks

DERK3001-JEK

4867

23364 7590 01/05/2009

BACON & THOMAS, PLLC

625 SLATERS LANE

FOURTH FLOOR

ALEXANDRIA, VA 22314-1176

EXAMINER

SHAPIRO, JEFFERY A

ART UNIT

PAPER NUMBER

3653

MAIL DATE

DELIVERY MODE

01/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,796	<b>Applicant(s)</b> DERKS ET AL.	
	<b>Examiner</b> JEFFREY A. SHAPIRO	<b>Art Unit</b> 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-4, 6, 8-12, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mennie et al (US 2007/0095630 A1) in view of Ratterman et al (US 5,295,196) and further in view of Allan et al (US 5,931,277) and still further in view of Rhoads et al (US 6,636,615 B1) and still further in view of Fontenot (US 4,697,650).

Regarding Claims 1, 3, 4, 6, 8, 9, 11, 14 and 16, Mennie discloses a conveying means (16 or 256) for conveying bills having magnetic threads within them. See, for example, figures 2 and 10.

Mennie further discloses a plurality of sensors such as (140a-f) at figure 5 which are either optical or magnetic sensors. See paragraphs 75, 78-80 which state that the scanheads (260 and 262) can be embodied as an optical scanhead followed by a magnetic scanhead or two scanheads each having both optical and magnetic sensors. Note that paragraphs 35 and 79 mention that a single scanhead can have both optical and magnetic sensors.

Paragraphs 38-42 describe use of detection of a border portion of a bill, which is considered to include the front and back edges of the bill, or a bill feature, by photodetector (26 or 140a-f), which is considered a scanhead (260), and can be used in conjunction with encoder (32 or 278) to determine position of the bill, and thereby turn on or off various scanner optical or magnetic sensors, as discussed at paragraphs 35, 40, 41 and 52, lines 5-18, for example. **Note also that paragraph 93 discloses that optical sensors may be used for detecting the location of security threads. Such a position can be considered a single property, i.e., a first property.** An optical sensor necessarily detects transmitted light. Paragraph 38 further describes encoder (32) as an “optical encoder”, which is another form of optical sensor. Paragraph 39 mentions that the photodetector (26) detects the start of the printed pattern of the bill. Note also that the photodetector will inherently detect the edge of the sheet, as the sheet will begin to obstruct the transmitted light striking the photodetector. Also, paragraph 53, lines 1-10, discusses measuring the length and width of the bill.

Further regarding Claim 1, Mennie incorporates Ratterman by reference at paragraph 37, last four lines. Paragraph 38, last eight lines, of Mennie states that the

mechanics of the feed mechanism “ensures positive contact is maintained between the bill and the transport path, particularly when the bill is being scanned by the scanheads.” The detecting means is the scanning means (18), and is incorporated into the transport path. Ratterman illustrates the feeding means at figure 13 and discusses it at col. 23, lines 3-15, 37-68 and col. 24, lines 1-33.

Further regarding Claim 1, note that figure 5 illustrates sensors (140a-f) that are staggered, in order to provide overlapping coverage between sensors, as illustrated at figure 4c and discussed at paragraph 43, and are discussed at paragraph 52 as being alternatively overlapping or non-overlapping. Overlapping sensors are described as providing greater selectivity of scannable areas, therefore allowing compensation for variances in position of the printed items relative to the edge of the bill. See paragraph 52, lines 15-28.

Additionally, note that photodetector (26 or 140a-f) is considered a transmitted light detector. See also paragraph 122, which mentions at lines 4-8, that an optical sensor using transmitted light may be used to detect the security thread.

Again, note that paragraph 39 mentions that the photodetector (26) detects the start of the printed pattern of the bill. Note also that the photodetector will inherently detect the edge of the sheet, as the sheet will begin to obstruct the transmitted light striking the photodetector. Also, paragraph 53, lines 1-10, discusses measuring the length and width of the bill, which is inherently able to be performed using the encoder-detected shaft rotation information in conjunction with the photodetector information.

Regarding a front image sensor and a back image sensor, note that Mennie discloses both scanning heads (18a) and (18b), as illustrated in figure 2, which can be construed as front and back, or scanning heads (260) and (262), as illustrated in figure 3, which can also be construed as front and back. Note again, that paragraphs 35 and 79 mention that a single scanhead can have both optical and magnetic sensors. Paragraph 52, lines 20-23 mentions that bills have tolerance variances in the printed images they exhibit.

Note that as the bill is transported under a scanhead, the entire surface is detected by the optical sensors, and that what ever orientation, as well as the front side edge or the back side edge of the bill is detected. **Note that the position of the detected data of the second property, i.e., magnetic data of the thread, is correlated with the position data detected by the encoder, as well as with respect to an edge of the bill.**

Paragraphs 86 and 87 disclose detecting and tracking the movement of the bill and the starting point of the printed pattern on the bill.

Paragraph 101, lines 9-end discloses comparing the magnetically detected areas with optical features in conjunction with the position data solicited by the encoder.

Regarding Claim 4, Mennie further discloses prestorage of position data of various image features of various denominations and determines the position of the magnetic thread, i.e., sensory object, with respect to the end position of the bill detected by the photodetector. See paragraphs 6, 53, 67, 69, 95, 100, 101 and 104. Paragraphs

100, 101 and 104 discuss storing the position data of various magnetic features of the bill.

Paragraph 81, which discusses detection of thread metal content and thread magnetic characteristics, of which such detection inherently requires appropriate metal or magnetic detectors. Note also that a magnetic detector inherently identifies a metal that is magnetic and therefore is considered a metal detector as well.

Mennie does not expressly disclose, but Allan discloses altering the derivation of the first property from the data of the first measuring, for the purpose of preventing fraud. See Allan, abstract, figure 11, element (204), figures 7 and 8, figure 22, col. 12, lines 15-24 and col. 19, lines 5-31.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have added the self-correcting anti-fraud feature to Mennie's bill validating apparatus, as taught by Allan, for the purpose of correlating the output from several bill sensors and therefore alter a derived property, i.e., a second property, such as location of magnetic security threads from a first property, such as the observed optical location of said threads, used to determine the bill's acceptability.

Mennie does not expressly disclose, but Rhoads discloses use of a digital watermark having several characteristics which are identified and compared. For example, energy level, whether the watermark has fine or course graines, geometrically linear or random assignment of pixels, and RGB to HSI or HSI to RGB transformations are checked for the same location as well as between locations. See col. 2, lines 4-29,

col. 3, line 1-col. 9, line 45. Note also in Rhoads' Claim 5 in Col. 10, lines 16-27, that reference is made to "at least first and second parameters" which includes other parameters than a single parameter. Note for example, Claim 6 refers to a third parameter related to wear of the document.

Mennie does not expressly disclose, but Fontenot discloses a measurement situation including measuring for a specific location of an item, i.e., a drilled hole, first and second properties at the location and correlating them with each other. See Fontenot, Claims 1-3 and col. 3, lines 26-29.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have used Mennie's banknote discrimination device to determine two or more properties at a single location of a banknote and correlate them, as taught by Allan, Rhoads and Fontenot, for the purpose of obtaining accurate measurements to determine the genuineness of a particular banknote and thus reduce fraud. Note that this would have been logical to one of ordinary skill since Rhoads teaches use of watermarks with specific locations and more than two properties at each said location, and Fontenot discloses the well-known technique of correlating two different properties at a particular location of an item in order to ensure accuracy of measurement and thus increasing the likelihood of a valid analysis of said data.

Regarding Claims 2 and 10, as best understood, note that Allan discloses removing data, such as element (730) in figure 14 in order to alter the derivation of the data thus preventing fraudulent bills from being used in the machine.



Regarding Claims 5, 7, 13 and 15, Mennie discloses the bill validation device as described above.

Mennie does not expressly disclose, but Rhoads discloses determining the amount of soiling and damage, i.e., “wear” of a particular bill by a validator. See Rhoads, cited previously.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have subjected a bill presented to Mennie’s validator with fitness test to determine the degree to which a bill is soiled, torn or otherwise damaged, i.e., worn, as taught by Fontenot, for the purpose of further ensuring the rejection of unacceptable bills.

### ***Response to Arguments***

2. Applicant's arguments with respect to Claims 1-16 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY A. SHAPIRO whose telephone number is (571)272-6943. The examiner can normally be reached on Monday-Friday, 9:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Patrick H. Mackey can be reached on (571)272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey A. Shapiro/  
Examiner, Art Unit 3653

December 19, 2008